METHOD OF DETERMINING RANDOM ACCESS CHANNEL PREAMBLE DETECTION PERFORMANCE IN A COMMUNICATION SYSTEM

ABSTRACT OF THE DISCLOSURE

In a method for determining link level performance of random access channel (RACH) preamble detection in a wireless communication system, link level performance results may be obtained without having to perform extensive simulation. Link-level performance results of RACH preamble detection may be characterized by determining a conditional detection probability. The conditional detection probability may be conditioned upon an instantaneous channel coefficient, and the conditional detection probability may be expressed in terms of an instantaneous detection metric. Instantaneous link-level performance may be characterized using a look-up table, so that a system model evaluated in accordance with the method may accurately represent instantaneous system behavior.